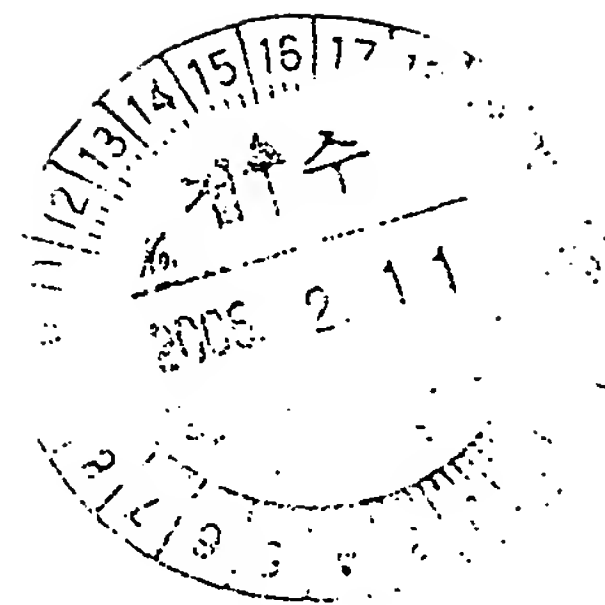


## PATENT COOPERATION TREATY

## PCT

## INTERNATIONAL SEARCH REPORT

(PCT Article 18 and Rules 43 and 44)



Applicant's or agent's file reference YL04022PCT	<b>FOR FURTHER ACTION</b> see Form PCT/ISA/220 as well as, where applicable, item 5 below.	
International application No. <b>PCT/KR2004/003031</b>	International filing date ( <i>day/month/year</i> ) <b>23 NOVEMBER 2004 (23.11.2004)</b>	(Earliest) Priority Date ( <i>day/month/year</i> ) <b>10 DECEMBER 2003 (10.12.2003)</b>
Applicant  <b>CJ CORP. et al</b>		

This International search report has been prepared by this International Searching Authority and is transmitted to the applicant according to Article 18. A copy is being transmitted to the International Bureau.

This international search report consists of a total of 4 sheets.

☐ It is also accompanied by a copy of each prior art document cited in this report.

1. Basis of the report

a. With regard to the language, the international search was carried out on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item:

☐ The international search was carried out on the basis of a translation of the international application furnished to this Authority (Rule 23.1(b)).

b. ☒ With regard to any nucleotide and/or amino acid sequence disclosed in the international application, see Box No. I.

2. ☐ Certain claims were found unsearchable (See Box No. II)

3. ☐ Unity of invention is lacking (See Box No. III)

4. With regard to the title,

☒ the text is approved as submitted by the applicant.

☐ the text has been established by this Authority to read as follows:

5. With regard to the abstract,

☐ the text is approved as submitted by the applicant.

☒ the text has been established, according to Rule 38.2(b), by this Authority as it appears in Box No. IV. The applicant may, within one month from the date of mailing of this international search report, submit comments to this Authority.

6. With regard to the drawings,

a. the figure of the drawings to be published with the abstract is Figure No. 2

☒ as suggested by the applicant.

☐ because the applicant failed to suggest a figure.

☐ because this figure better characterizes the invention.

b. ☐ none of the figure is to be published with the abstract.

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/003031

## Box No. 1 Nucleotide and/or amino acid sequence(s) (Continuation of item 1.b of the first sheet)

1. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, the international search was carried out on the basis of:

a. type of material

☒

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☒

in written format

☒

in computer readable form

c. time of filing/furnishing

☒

contained in the international application as filed

☒

filed together with the international application in computer readable form

☐

furnished subsequently to this Authority for the purposes of search

2. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

3. Additional comments:

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/003031

**A. CLASSIFICATION OF SUBJECT MATTER****IPC7 C12N 15/31, C12N 15/03, C12N 15/77, C12N 15/09**

According to International Patent Classification (IPC) or to both national classification and IPC

**B. FIELDS SEARCHED**

Minimum documentation searched (classification system followed by classification symbols)

IPC7 C12N 15/31, C12N 15/03, C12N 15/77, C12N 15/09

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Korean Patents and Applications for inventionElectronic data base consulted during the international search (name of data base and, where practicable, search terms used)  
Delphion, Genbank, Pubmed, CA "(Corynebacterium glutamicum) AND (Threonine Importer OR Threonine Transport)"**C. DOCUMENTS CONSIDERED TO BE RELEVANT**

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X A	Genbank Accession # BAC00421 (S. Nakagawa) 05 Jun. 2002 See sequence history	1 2,3
P, X P, A	Genbank Accession # CAF18967 (J. Kalinowski et al) 22 Jan. 2004 See sequence history	1 2,3
A	Appl. Microbiol. Biotechnol., Vol.62, May 2003, pages 99-109, M. Ikeda et al. "The Corynebacterium glutamicum Genome : Features and Impacts on Biotechnological Processes"	1-3
A	J. Biotechnol., Vol.104, Sep. 2003, pages 5-25, J. Kalinowski et al. "The Complete Corynebacterium glutamicum ATCC 13032 Genome Sequence and Its Impact on the Production of L-Aspartate-Derived Amino Acids and Vitamins"	1-3
A	J. Bacteriol., Vol.183, No.18, Sep. 2001, pages 5317-5324, P. Simic et al. "L-Threonine Export : Use of Peptides to Identify a New Translocator from Corynebacterium glutamicum"	1-3
A	Arch. Microbiol., Vol.165, 1996, pages 48-54, L. Palmieri et al. "Threonine Diffusion and Threonine Transport in Corynebacterium glutamicum and Their Role in Threonine Production"	1-3

☐ Further documents are listed in the continuation of Box C.☐ See patent family annex.

## \* Special categories of cited documents:

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier application or patent but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art

"&amp;" document member of the same patent family

Date of the actual completion of the international search

01 FEBRUARY 2005 (01.02.2005)

Date of mailing of the international search report

02 FEBRUARY 2005 (02.02.2005)

Name and mailing address of the ISA/KR

Korean Intellectual Property Office  
920 Dunsan-dong, Seo-gu, Daejeon 302-701,  
Republic of Korea

Facsimile No. 82-42-472-7140

Authorized officer

CHANG, Je Hwan

Telephone No. 82-42-481-8158



# INTERNATIONAL SEARCH REPORT

International application No.

PCT/KR2004/003031

Box No. IV Text of the abstract (Continuation of item 5 of the first sheet)

This invention relates to a novel L-threonine importer gene identified from *Corynebacterium glutamicum* and a method of applying the gene for L-threonine producing strain development. The gene and the method from the present invention will be useful in L-threonine production by improving concentration of L-threonine in fermentation broth and process yield.